

# **DETECTION OF HARD MASK REMAINING ON A SURFACE OF AN INSULATING LAYER**

## **Abstract**

A detection system and method including a means for performing a test on a semiconductor device and obtaining test data therefrom. The semiconductor device includes an insulating layer, a hard mask layer on a surface of the insulating layer, and a plurality of electrically conductive lines within a trench in the insulating layer. The insulating layer comprises a first dielectric material. The hard mask layer comprises a second dielectric material. The dielectric constant of the second dielectric material exceeds the dielectric constant of the first dielectric material or the second dielectric material comprises an element that is not comprised by the first dielectric material. The test data is a function of a spatial distribution of the hard mask layer on the surface of the insulating layer. The detection system and method includes a means for determining from the test data a measure of the spatial distribution of the hard mask layer on the surface of the insulating layer.